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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/765,831	01/29/2004	Tatsuo Tabaru	Q78763	2354

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EXAMINER

BAREFORD, KATHERINE A

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 04/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/765,831

Applicant(s)

TABARU ET AL.

Examiner

Katherine A. Bareford

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>5/04,8/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is confusing as worded, as the preamble, at lines 1-2, refers to an intermediate layer, while this intermediate layer is not referred to in the substrate. If applicant means the oxide layer, this should be clarified. Furthermore, an oxidation step is provided of forming an oxide layer. However, it is not clarified that the coating step occurs onto the formed oxide layer. As a result, the oxide layer could be removed before coating, as it is not clarified that the coating is applied on the intermediate/oxide layer. For the purposes of examination, the Examiner is treating the claims as requiring the oxide layer to be present when coating occurs.

In claim 8, line 1 and claim 9, line 1, the claim refers to "The coating material according to Claim 1". This is confusing because claim 1 is to a coating method. It appears that the phrase should be "The method for forming a film, according to Claim 1" as in the other dependent claims. If applicant is actually claiming a coating material, this is an improper claim, as the composition claim should not depend from a process claim. For the purposes of examination, the Examiner is treating the claims as being method claims.

The other dependent claims do not cure the defects of the claims from which they depend.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4-6 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Good et al (US 3928906).

Good teaches a method for forming a film on the surface of a substrate. Column 5, line 65 through column 6, line 55. The film has an intermediate layer at an interface with the substrate. Column 6, lines 10-25. The method includes a preliminary oxidation step of forming an oxide layer on the substrate by oxidation thereof. Column 6, lines 1-25. The substrate can be a stainless steel material. Column 6, lines 1-3. A coating step is provided of coating the oxidized surface with a coating material that can be NiAl. Column 6, lines 35-45. The coating material contains an element (Al) forming an oxide having a low enthalpy of formation as compared to the oxide of the stainless steel substrate. Column 6, lines 35-45.

Claim 2: the coating step can further comprise a heating step. column 6, lines 25-45 (the preheating and the plasma spraying).

Claim 4: the film can be formed by plasma spraying. Column 6, lines 35-45.

Claim 5: the coating material can be NiAl. Column 6, lines 35-45.

Claim 6: the coating material can be NiAl. Column 6, lines 35-45.

Claim 12: the coating material can be NiAl. Column 6, lines 35-45.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-7 and 10-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tzatzov et al (US 2002/0192494) in view of Good et al (US 3928906).

Tzatzov teaches a method of coating surfaces such as stainless steels. Paragraph [0018]. The surfaces are coated with a coating material that can be a Ni-Al alloy. See paragraphs [0023] and [0028] (M can be nickel). The alloy can also contain molybdenum. See paragraph [0028]

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(T can be molybdenum). The alloy also contains silicon. See paragraphs [0023] and [0028].

The components can be in various amounts. See paragraph [0029]. Two or more powders of the constituents of the alloy can be blended with an effective amount of binder to adherently coat the substrate. Paragraph [0031]. The coating method can be thermal spraying, plasma transferred arc, or isostatic pressing. See claim 2. Reaction sintering with heating also takes place simultaneously or after coating. See paragraphs [0031]—[0032].

Tzatzov teaches all the features of these claims except the preliminary oxidation step (claim 1), (2) the hot isostatic press sintering (claim 4) and (3) the specific material compounds (claims 7, 13 and 14).

However, Good teaches a method for forming a film on the surface of a substrate. Column 5, line 65 through column 6, line 55. The film has an intermediate layer at an interface with the substrate. Column 6, lines 10-25. The method includes a preliminary oxidation step of forming an oxide layer on the substrate by oxidation thereof. Column 6, lines 1-25. The substrate can be a stainless steel material. Column 6, lines 1-3. A coating step is provided of coating the oxidized surface with a coating material that can be NiAl. Column 6, lines 35-45. The coating material contains an element (Al) forming an oxide having a low enthalpy of formation as compared to the oxide of the stainless steel substrate. Column 6, lines 35-45. The coating step can further comprise a heating step. column 6, lines 25-45 (the preheating and the plasma spraying). The film can be formed by plasma spraying. Column 6, lines 35-45. The coating material can be NiAl. Column 6, lines 35-45.

It would have been obvious to one of ordinary skill in the art the time the invention was made to modify Tzatzov to provide a preliminary oxidation step before coating as suggested by Good with an expectation of providing a desirably bonded coating, because Tzatzov teaches providing a nickel aluminum based coating on a stainless steel surface, and Good teaches that when providing a nickel aluminum based coating on a stainless steel surface, it is desirable to oxidize the surface prior to coating to provide a better bond. It would further have been obvious to provide hot isostatic press sintering as the application method, because Tzatzov teaches to provide coating with isostatic pressing and that simultaneously with the coating reactive sintering with heating can be provided, thus suggesting the use of hot isostatic press sintering, which provides both teachings. As to the specific compounds used, Tzatzov teaches to use all of the materials listed in the claims, and that these materials can vary in the amounts used, thus suggesting to perform routine experimentation to optimize the amount of materials to be used for the specific application desired.

Allowable Subject Matter

8. Claims 8 and 9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The cited prior art does not teach or suggest the use of the components as claimed.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Katherine A. Bareford whose telephone number is (571) 272-1413. The examiner can normally be reached on M-F(6:00-3:30) with the First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and for After Final communications.

Other inquiries can be directed to the Tech Center 1700 telephone number at (571) 272-1700.

Furthermore, information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


KATHERINE BAREFORD
PRIMARY EXAMINER